# GOVERNMENT OF INDIA
# SCIENCE AND TECHNOLOGY
# LOK SABHA

UNSTARRED QUESTION NO:2477
ANSWERED ON:30.11.2016
Shortage of Critical Minerals
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**Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:**

(a) the steps taken by the Government to counter shortage of critical minerals necessary for developing clean- energy applications, solar missions, etc.; and

(b) the details of the steps taken for byproduct recovery of primary metals?

## Answer

MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE MINISTRY OF EARTH SCIENCES
(SHRI.Y. S. CHOWDARY)

(a) The Government has formulated New Mineral Exploration Policy (NMEP, 2016), which emphasizes periodic evaluation of critical minerals and updation of geo-scientific data for assessment of country's mineral resources. Out of a total of 213 mineral investigation programme taken up during 2016-17, 23 belong to Natural Energy Resources (except oil and gas). Under various initiatives, promising alternative materials e.g., Barium Zirconium Oxide (BaZrO3. BaCO3) nanoparticles could replace lead based x-ray shields; Copper Indium Gallium (di) selenide (CIGS) dye-sensitized solar cells to replace silicon based solar cells; aerogel and graphene base material for fabrication of super capacitors etc. have been developed.

(b) Minor recovery of these minerals is being done as by-products of primary metal processing due to their very low content affecting technical and economic viability. Department of Atomic Energy (DAE) has undertaken recovery of Gallium, which is an important element in Clean Energy applications. Bhabha Atomic Research Centre (BARC) and National Aluminum Company Limited (NALCO) are working together for development of technology for recovery of Gallium at NALCO's aluminum plant at Damanjodi, Odisha.

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